Abstract View

ETHANOL SELF-ADMINISTRATION AND CONDITIONED PLACE PREFERENCE ARE MARKEDLY REDUCED IN MICE LACKING CANNABINOID CB1 RECEPTORS.

P.K.Thanos*; E.S.Dimitrakakis; S.N.Rivera; O.Rice; Y.S.Piyis; A.Gifford; S.J.Gatley; N.D.Volkow

Med. Dept., Brookhaven Natl. Lab., Upton, NY, USA

Cannabinoids are postulated to play a role in modulating the reinforcing effects of abused drugs including alcohol. Experiment 1 examined alcohol self-administration in cannabinoid CB1 receptor knockout (KO), heterozygous (HT) and wild-type (WT) mice in a two-bottle choice paradigm. Mice were trained in a limited 8-hour access / day to 10 % (v/v) ethanol versus water. After baseline drinking mice were treated (ip) with the CB1 antagonist SR 141716A (5 mg/kg). Data analysis consisted of % ethanol preference and ethanol intake (g/kg). Experiment 2 examined the CB1 WT and CB1 KO strains in a conditioned place preference (CPP) procedure (using a standard 3-compartment apparatus) between saline and 2 mg/kg ethanol. Percent time spent in each compartment was measured and compared across strain. Results indicated that the CB1 WT mice displayed significantly higher ethanol consumption compared to CB1 KO mice. Treatment with SR 141716A significantly attenuated ethanol intake in the WT and HT mice. Finally, CPP analysis revealed that the WT mice spent significantly more time in the ethanol-paired versus saline-paired compartment. No difference in CPP was observed in the KO mice. These data demonstrate that the cannabinoid CB1 receptor is an essential component of the molecular pathway determining alcohol consumption.
Support Contributed By: The NIDA, DA06891-06. and the US Department of EnergyDE-AC02-98CH10886.

Citation:
P.K. Thanos, E.S. Dimitrakakis, S.N. Rivera, O. Rice, Y.S. Piyis, A. Gifford, S.J. Gatley, N.D. Volkow. ETHANOL SELF-ADMINISTRATION AND CONDITIONED PLACE PREFERENCE ARE MARKEDLY REDUCED IN MICE LACKING CANNABINOID CB1 RECEPTORS. Program No. 665.8. *2003 Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2003. Online.

close